

I CLAIM:

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5 1. The process of connecting semiconductor die to a substrate:
said process comprising the steps of adhering a thin, flexible, heat curable film which is at least partially cured and is of a first area, to a thin semiconductor wafer of a second area and which contains a plurality of laterally displaced, identical semiconductor die of respective third areas which are each substantially less than the area of said first area;

10 thereafter simultaneously singulating both said heat curable film and said plurality of identical die to form individual elements each being of the area of said die and a matching area of adhesive film adhered to one surface of said die;

thereafter applying said singulated die to the top surface of said substrate surface with the film on said die pressed against said top surface; and

thereafter fully curing said film to firmly adhere said die to said substrate.

2. The process of Claim 1 wherein said substrate is a conductor lead frame.

3. The process of Claim 1 wherein said film is a polyimide.

4. The process of Claim 2 wherein said film is a polyimide.

5. The process of Claim 1 wherein said film on said die has the same or different area as that of said die after assembly onto said substrate.

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6. The process of Claim 1 which includes the further step of adhering a

second semiconductor die with a second adhesive film thereon to said substrate at a position laterally removed from the first die.

7. The process of Claim 1 which includes the further step of adhering a second die with a second adhesive film thereon to the top of said die secured to said substrate.

8. The process of Claim 1 wherein said first area is substantially identical to, or different from, said second area.

9. The process of Claim 1 wherein said die and film are moved to said substrate by pick-and-place apparatus.

10. The process of Claim 1 wherein said adhesive film has a smaller area than said top surface of said die.

11. The process of Claim 7 wherein said adhesive film has a smaller area than said top surface of said die and wherein said second die and said second adhesive film both have the same area as said adhesive film.

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